

Gp41-engineered loop = SEQ ID NO 7 and NO 8

18	36		72	06	108	126	129
Q A R Q L L S G I V Q Q Q N N L L CAG GCC AGA CAA TTA TTG TCT GGT ATA GTG CAG CAG AAC AAT TTC CTG	A I E A Q Q H L L Q L T V W G I K GCT ATT GAG GCG CAA CAG CAT CTG TTG CAA CTC ACA GTC TGG GGC ATC AAG	V E R Y L K D Q Q L GTG GAA AGA TAC CTA AAG GAT CAA CAG CTC	G I D G S S G G R G G S N A S W S GGG ATT GAC GGT AGA GGT AGA GGT GGA TCC AAT GCT AGT TGG AGT	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	E I N N Y T S L I H S L I E E S Q N 108 GAA ATT AAC AAT TAC ACA AGC TTA ATA CAC TCC TTA ATT GAA GAA TCG CAA AAC	Q Q E K N E Q E L L B L D L B H H H CAG CAA GAA AAG AAT GAA GAA TTA TTG GAA TTA GAT CTC GAG CAC CAC	
L TTC	I SAT(O'CAC	₩ r TG	D i GA(CAZ	H CA(
N AA7	g GGG	~ CV V	S AG	₩ TĞ	S	H	
N AAC	W TGG	D GAT	A GCT	E GAG	B GAA	E GAG	,
ZAG	V GTC	K AAG	N AAT	M ATG	3AA	CTC	
AG (CA	TA /	S TCC.)	, 55 'GG',	H E) 3AT (
00	C A	CI	V, Y	CI	I A A	1 A	
οğ	70	Ϋ́	<u>ი</u> ი	T AC	J.E.	LTT	
V GTG	O CAA	R AGA	G GGT	T ACG	S TCC	E GAA	
(ATA	L TTG	E 3AA	R AGA	H CAC	Н	L TTG	
GT /	L CTG	, TG	G GGT	I J	[\TA	L ITA	
9 6	XI (7 C	Y (∠ 5 G A	, A		
S	J C	₽ GC	ა ე	₩	JE.	E G	
L TTG	CAC	L CTG	S AGT	I ATT	S AGC	CAA	
L TTA	Q CAA	I ATC	S AGC	Q CAG	T ACA	E GAA	
CAA	A 3CG	R AGA	G GGT	E BAA	Y FAC	AAT	
GA G	YG (ZA /	C	Ċ G	AT 7	AG.	⋖ '
A A	щζ	4 9	ρğ	L CTG	zZ	K A	* TG
A GCC	I ATT	Q CAG	I ATT	S TCT	N AAC	E GA⁄	H CAC
Q CAG	A GCT	L CTC	G GGG	K AAA	I ATT	O CAA	H
M ATG	R AGG	Q L Q A R I L A CAG'CTC CAG GCA AGA ATC CTG GCT	L CTG (N AAT	E GAA	Q CAG	H H H * CAC CAC CAC TGA

<u>2A</u>

Gp41 (region 545-684): SEQ ID NO 1

QARQLLSGIVQQNNLLRAIEAQQHLLQLTVWGIK QLQARILAVERYLKDQQLLGIWGCSGKLICTTAVP WNASWSNKSLEQIWNNMTWMEWDREINNYTSLIHS LIEESQNQQEKNEQELLELDKWASLWNWFNITNWL

<u>2B</u>

Gp41 regions

Region 555-577	SEQ ID NO 3	QQQNNLLRAIEAQQHLLQLTVWG
Region 572-601	SEQ ID NO 4	QLTVWGIKQLQARILAVERYLKDQQLLGIW
Region 590-620	SEQ ID NO 5	RYLKDQQLLGIWGCSGKLICTTAVPWNASWS
Region 628-663	SEQ ID NO 6	WNNMTWMEWDREINNYTSLIHSLIEESQNQQEKNEQ

<u>2C</u>

Linker oligopeptide: SEQ ID NO 2

SGGRGGS

<u>2D</u>

Region 604-615: SEQ ID NO 15: SGKLICTTAVPW (-12 residues)

Region 598-622: SEQID NO 16: LGIWGCSGKLICTTAVPWNASWSNK (-25 residues)

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ON O
SEQ ID

556	574	592	610	628	646	664	675
CIG	K AAG	r CTC	W TGG	¥ 7GG	I ATT	D GAT	
L TTG	I ATC	o Cag	P CCT	T	L TTA	L TIA	
n AAT	ტ ტტ	CAA	v GTG	TACG	S TCC	e Gala	
N AAC	W TGG	D GAT	A GCT	H CAC	H CAC	L TTG	
o CAG	V GTC	k Aag	TACT	n Aat	I ATA	L TTA	
Q CAG	T ACA	I. CTA	T ACC		L TTA	e gaa	
Q CAG	r CTC	Y TAC	SAGC	I ATT	S AGC		
V GTG	o Caa	r Aga	i ATT		T ACA		I ATA
I ATA	L TTG	e gaa	r CTC	E GAA			N AAC
G GGT	L CTG	$^{ m V}$ GTG	K AAA	L CTG	n AAT	k Aag	FITT
S TCT	H CAT	A GCT	G GGA	S TCT	n AAC		
L TTG	o CAG	L CTG	S TCT	k aaa	i Att	o Caa	n AAT
L I TTA	o Caa	I ATC	s AGC	n AAT	E GAA		W
CAA	A GCG	r Aga	G GGT	S AGT	r aga	n AAC	L TTG
r aga	E GAG	A GCA	W TGG	W TGG		O CAA	S AGT
A GCC	I ATT	CAG	I ATT	S AG1		S TCG	A GCA
(V) Q540 A R (GTA) CAG GCC AGA	A GCT	r CIC	ය යෙය	A GCT	e Gag	e gaa	TG TG
V) GTA)	R AGG	Q CAG	L CTG	n aat	M ATG	e gaa	K AAA

	SEQ	\mathbb{D}	NO	17
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M	Q	A	R	Q	L	L	s	G	I	v	Q	Q	Q	N	N	L	L	18
R	A	I	E	A	Q	Q	H	L	L	Q	L	T	v	W	G	I	ĸ	36
Q	L	Q	A	R	I	L	A	v	E	R	Y	L	ĸ	D	Q	Q	L	54
s	G	G	R	G	G ·	s	s ·	L	E	Q	I	W	N	н	T	T	W	72
M	E	W	D	R	E	I	N	N	Y	T	s	L	I	н	s	L	I	90
E	E	s	Q	N	Q	Q	E	к	И	E	Q	E	L	L	E	L	D	108
K	W	A	s	L	W	N	W	F	N	I	T	N	W	L	D	H	H	126
н	н	н	Ħ															

FIGURE 4A

SEQ ID NO 18

M	Q	A	R	Q	L	L	S	G	I	v	Q	Q	Q	N	N	L	L	18
R	A	I	E	A	Q	Q	н	L	Ŀ	Q	L	T	v	W	G	I	ĸ	36
Q	L	Q	A	R	I	r	A	v	E	R	Y	L	K	ם	Q	Q	L	54
s	G	G	R	G	G	s	s	L	E	Q	I	W	N	н	T	T	W	72
M	E	W	D	R	E	I	N	N	Y	T	s	L	I	н	s	L	I	90
E	E	s	Q	N	Q	Q	E	ĸ	N	E	Q	E	L	r	E	L	D	108
ĸ	W	A	s	L	W	N	W	F	N	I	T	N	D	Н	H	H	н	126
н	н																	

FIGURE 4B

SEQ	m	NO	19
$\sim \sim$	\mathbf{L}	110	1

M	Q	A	R	Q	L	L	s	G	I	v	Q	Q	Q	N	N	L	L	18
R	A	I	E	A	Q	Q	н	L	L	Q	L	T	v	W	G	I	ĸ	. 36
Q	L	Q	A	R	I	L	A	v	E	R	Y	L	ĸ	D	Q	Q	L	54
L	G	I	W	G	s	s	G	G	R	G	G	s	s	L	E	Q	I	72
W	N	H	T	T	W	M	E	M	D	R	E	I	N	N	Y	T	s	90
L	I	H	s	L	I	E	E	s	Q	N	Q	Q	E	ĸ	N	E	Q	108
E	L	L	E	L	D	ĸ	W	A	s	L	W	N	W	F	N	I	T	126
N	W	L	D	H	н	н	н	н	н									136

FIGURE 5A

SEQ ID NO 20

M	Q	A	R	Q	L	L	S	G	I	V	Q	Q	Q	N	N	L	L	18
R	A	I	E	A	Q	Q	H	L	L	Q	L	T	v	W	G	I	ĸ	36
Q	L	Q	A	R	I	L	A	· v	E	R	Y	r	K	D	Q	Q	P	54
L	G	I	W	G	s	s	G.	G	R	G	G	s	s	L	E	Q	I	72
M	N	H	т	T	W	M	E	W	D	R	E	I	N	N	Y	T	s	90
L	I	H	s	L	I	E	E	s	Q	N	Q	Q	E	ĸ	N	E	Q	108
E	L	L	E	r	D	ĸ	W	A	s	L	W	И	W	F	N	I	T	126
N	D	н	н	н	н	н	н											134

FIGURE 5B

Replacement Sheet Application No. 10/573,704

SEQ ID NO 21

															M	L	L	3
R	A	r	E	A	Q	Q	н	L	L	Q	L	T	v	W	G	I	K	21
Q	L	Q	A	R	I	L	A	v	E	R	Y	L	ĸ	D	Q	Q	P	39
s	G	G	R	G	G	s	s	L	E	Q	I	W	N	H	T	T	W	57
M	E	W	D	R	E	I	N	И	Y	T	s	L	I	н	s	L	I	75
E	E	s	Q	N	Q	Q	E	ĸ	N	E	Q	E	L	L	E	L	D	93
к	W	A	s	L	W	N	W	F	N	I	T	N	W	L	D	H	H	111
н	н	н	н															115